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WS-RP-00067

REMEDIAL ACTION PROGRAM ON JEFFERSON COUNTY OPEN SPACE LAND

STATUS REPORT FOR

PERIOD JANUARY 15, 1987 TO OCTOBER 15, 1987

EAC-420-87-3

October 15, 1987

Description  
Remedial Action  
Jefferson County Open Space  
Status Report  
EAC-420-87-3  
Leintin, F P  
vegetation  
soil  
pH - 5.1 to 5.5  
IS - 2.1 - 5.1 - 1.2

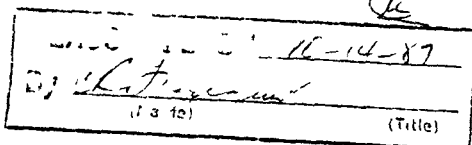
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STATUS REPORT FOR PERIOD  
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Introduction

Figure 1 shows the location of lands designated for remedial action as part of the 1984 settlement agreement. The settlement agreement ended litigation with landowners involving the Rocky Flats Plant and alleged impacts on land values proximate to the plant

Since the Colorado Department of Health (CDH) was a party to the lawsuit, the CDH soil plutonium standard for construction activities is the standard used in the mitigation. Figure 2 shows the results of sampling in the area for the years 1977 and 1985. Note the areas that were above the CDH construction limit of 0.9 pCi/g consistently through both sampling programs. One area is west of Mower Reservoir (Area A) and another is from Indiana and the RFP East Access Road east 1 mile to the Section 7 boundary (Area B). Sampling in both years was conducted according to the Colorado Department of Health (CDH) protocol and analyzed by independent laboratories. These are the two areas of interest for the remedial action in Jefferson County.

Historical Summary of Actions Through September 1, 1987 Area A - Four strips approximately 1500 feet x 150 feet were ripped and plowed in June and July of 1987. The strips were separated by undisturbed strips of ground approximately 150 feet wide (Figure 3). The total plowed area is approximately 20 acres. The plowed strips have not yet been planted. Sampling was conducted after the plowing and the results are shown in pCi/g on Figure 3. The west end of strip number one still showed values higher than the CDH construction standard. It was plowed a second time in July of 1987. It will be re-sampled in October of 1987. If the area fails to meet the CDH construction standard, it will again be re-plowed.



Area B - Approximately 100 acres were ripped and plowed in June and July of 1986. Figure 4 shows the configuration of the plowed and unplowed strips. Also shown on Figure 4 are the results of sampling conducted after the plowing was completed. All areas that were plowed now meet the CDH construction standard. In late Fall of 1986, native grasses were seeded into the area. In the Spring of 1987, it was apparent that the vegetation had failed. In June of 1987, the 100 acres were ripped again and sorghum was planted. The sorghum is tall and thickly growing.

#### Proposed Actions

Area A - There is no vegetation on the plowed strips other than a healthy weed crop of cheat grass. Cheat grass or downey brome is an aggressive annual grass that invades disturbed areas and competes with desirable species for water and nutrients. January and February are the driest months of the year and two of the most windy. A good vegetation cover is needed to prevent wind erosion. Winter wheat is the only vegetation that can be planted now that could provide cover in those months. Winter wheat must be planted as soon as possible. The area will be disked twice to control the cheatgrass and winter wheat planted the week of October 12. Mulch will be applied at a rate of 2 tons per acre and crimped into the soil. In late March or early April of 1988 the strips will be mechanically turned over or chemically treated to stop the wheat growth and to control weeds, and native grasses will be drilled. The wheat growth must be stopped to prevent it from competing for water and nutrients with the desired permanent vegetation. A mid-summer 1988 weed control treatment may be necessary. The intermediate strips will be plowed in the spring of 1989, at the earliest. The process of planting will be repeated with a completion date of Summer 1990.

Area B - The sorghum cover is doing very well, even on the rocky areas. The week of October 12 will be used to spray Roundup to kill the cheatgrass. The week of October 26 will then be used to plant native grasses through the sorghum cover. The sorghum will protect the ground, but will weather through the winter enough so that it will not shade the grass seedlings in the spring. Some weed control may be necessary in mid-summer of 1988. The intermediate strips will be plowed in the spring of 1989 and the whole process repeated.

The Soil Conservation Service has been consulted and concurs with the details of the plan

#### Departures from Historical Plans

Due to changing conditions caused by the difficulty in plowing the small rocky areas and the native grass seeding failure, some changes are warranted that require discussion with the Jefferson County Open Space and Administrative staffs. These are listed below:

- 1 Chemical weed control of cheatgrass will be necessary. Roundup will be sprayed under the sorghum cover or directly to weedy unseeded ground. This will reduce the tremendous cheatgrass cover and allow the perennial native to take hold. Roundup (isopropylamine salt of glyphosate) is an effective non-specific weed control agent which degrades quickly in the soil. It will be applied under strictly controlled situations by a licensed applicator with guidance from the manufacturer. The Rockwell project manager will discontinue operations if winds exceed 10 mph and if soil moisture is less than 15%.
- 2 An experimental use of a rock rake will be attempted prior to seeding this fall. Rocks will be windrowed to one side of a plowed strip in a long fence-like pile. It is possible that other measures may be needed such as borrowing a suitable cover, screening rocks out, etc. A small area with a large rock content will also be experimentally hydroseeded to determine the capabilities of hydroseeding and hydromulching.
- 3 The Soil Conservation Service originally recommended that the present seed mix be used to reclaim these lands. The mix consists of 40% western wheatgrass, 40% sideoats grama, 10% pubescent wheatgrass and 10% smooth brome. This recommendation was made to bring the land back

to native grassland, which is the designated goal and use in the SCS management plans for the area. These grasses can be very difficult to grow and require several years before an effective cover can be established.

Sideoats grama may take years to grow into a major community component. It makes up 40% of the seed mix. That leaves a large hole to fill in the community that will be left to bare soil and weeds in the meantime.

It is now recommended that the seed mix be altered to 40% Western wheatgrass, 40% smooth brome, 10% pubescent wheatgrass and 10% sideoats grama. This will establish a quick cover that protects the soil. Smooth brome planted on the Coors gasline on the RFP site has done very well and has stabilized the soil.

The Soil Conservation Service has been consulted and concurs with the herbicide spraying recommendation. The SCS has also agreed to reconsider the seed mix composition with either agreement of Jefferson County or with a land use goal stated by Jefferson County that will be compatible with a revised seed mix.

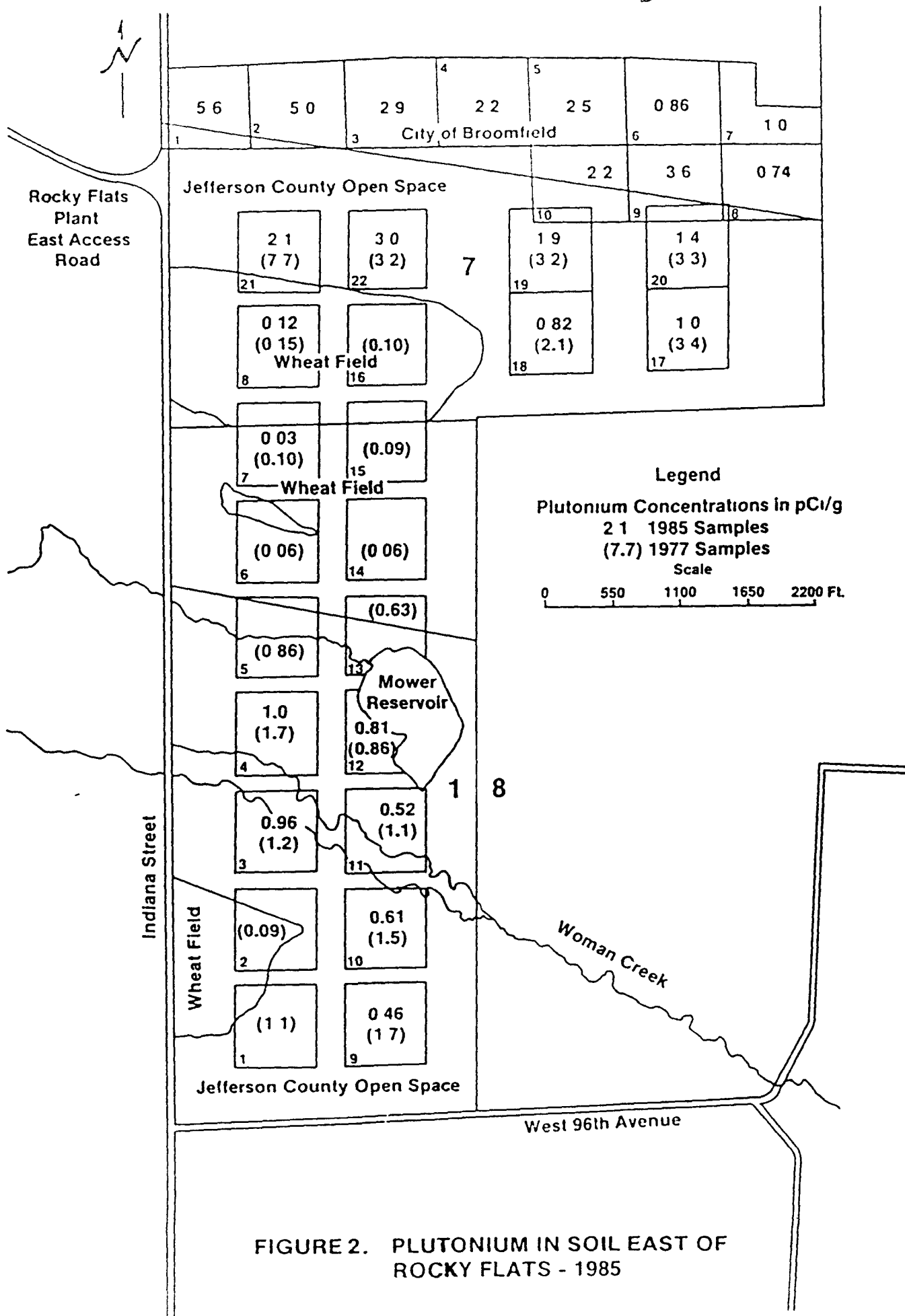
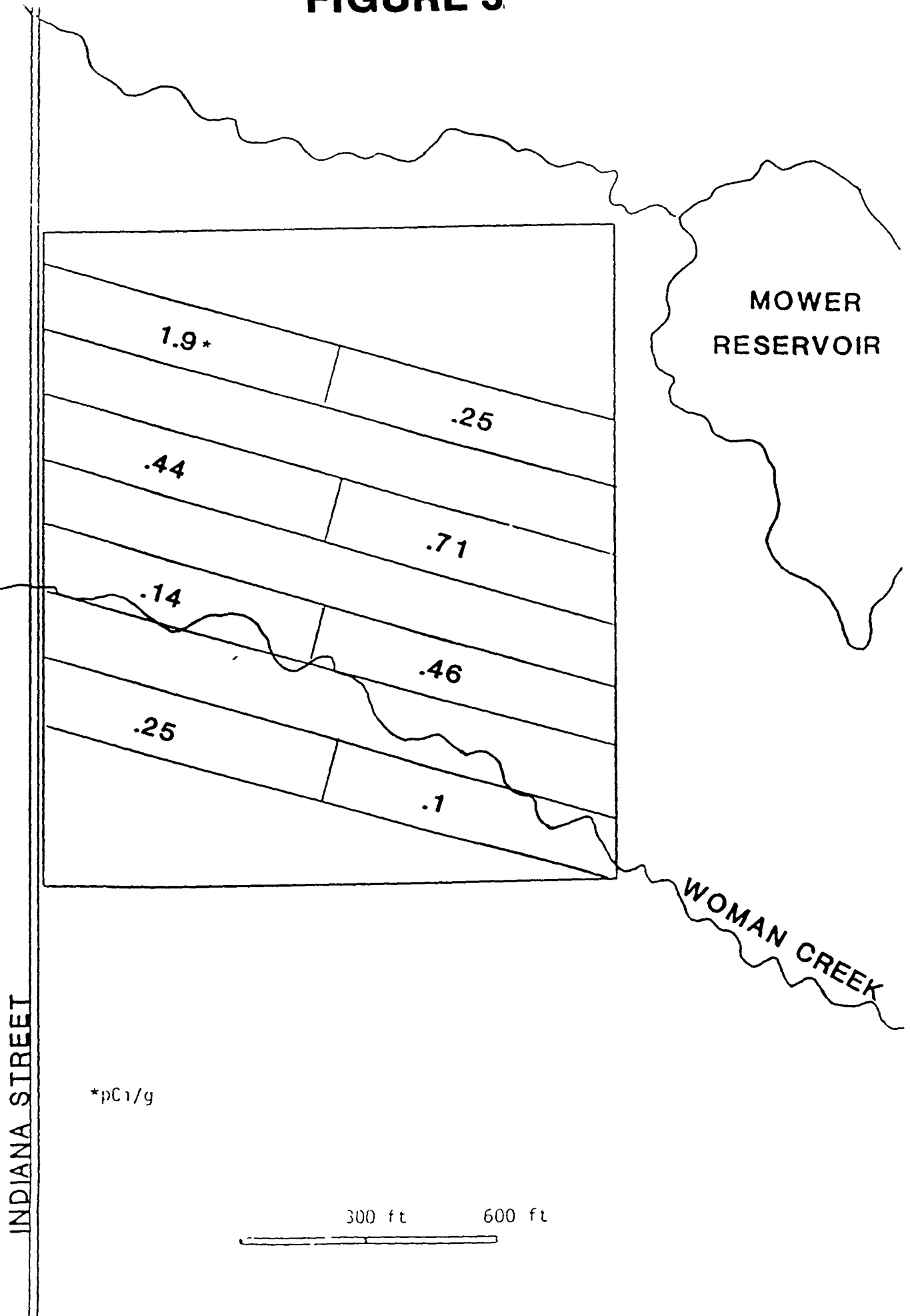


FIGURE 2. PLUTONIUM IN SOIL EAST OF ROCKY FLATS - 1985

# FIGURE 3



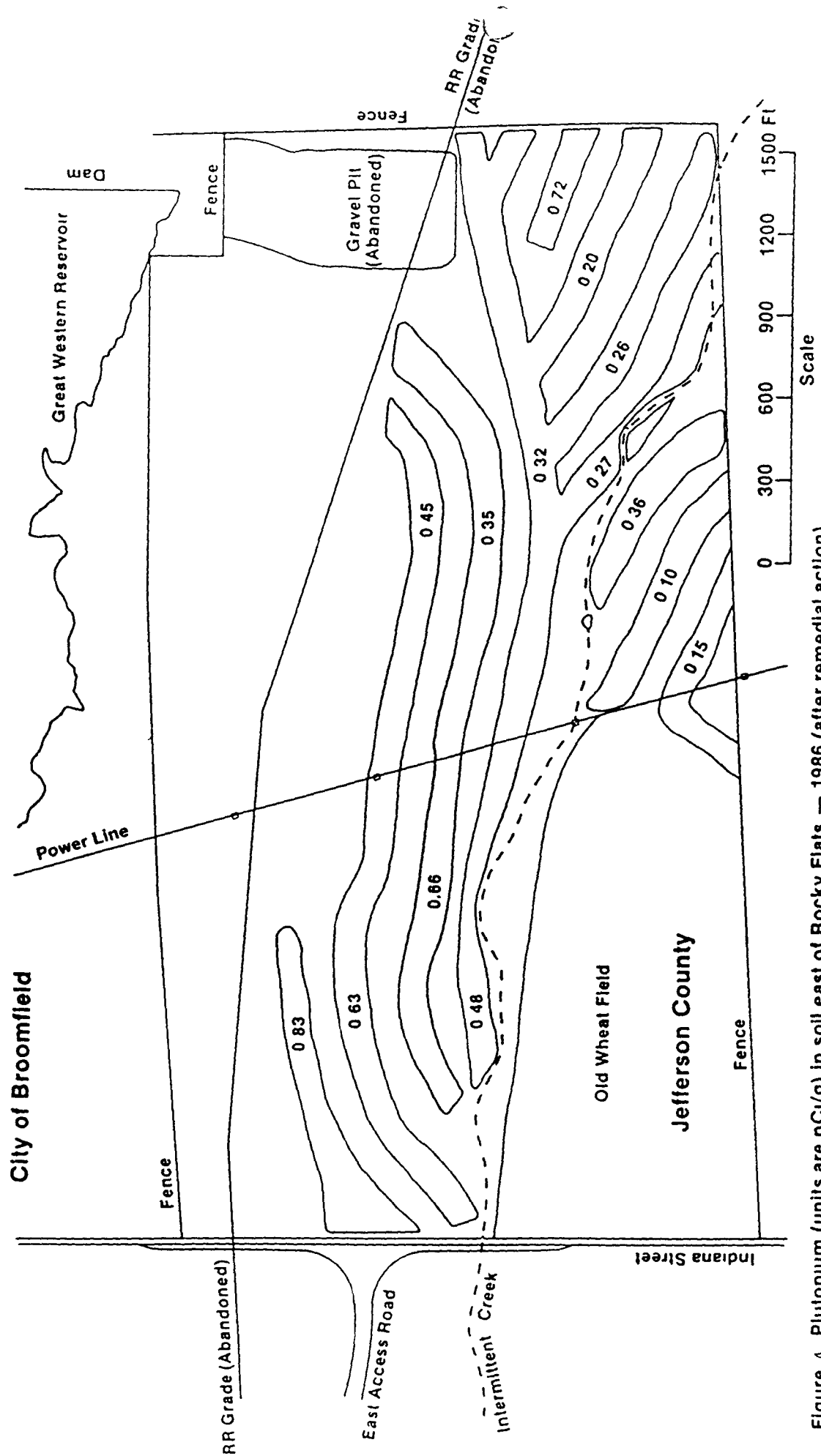


Figure 4 Plutonium (units are pCi/g) in soil east of Rocky Flats — 1986 (after remedial action)



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UPDATE FOR PERIOD JANUARY 1987 TO OCTOBER 1987

I Section 18, west and southwest of Mower Reservoir - 20 acres

- A. June 22 to July 31, 1987. Plowing and ripping operations conducted on 20 acres Four strips 150 feet wide and 1500 feet long were plowed After initial activities, sampling showed that the west end of the northern strip remained above the CDH standard. The northern-most strip was plowed again.
- B. Week of October 12, 1987. The strips will be disked to destroy cheat grass growth and planted with winter wheat Mulch will be added and crimped at a rate of 2 tons/acre This will stabilize the areas over the winter
- C. Late March or April, 1988. Strips will be mechanically turned over or chemically treated to stop wheat growth and seeded with native grasses
- D. Mid-summer, 1988, chemical weed control will be investigated.
- E. If stand of grass is offering adequate site stabilization, the unplowed areas will be plowed, tested and planted with winter wheat Fall 1988

II Section 7, south and southwest of Great Western Reservoir - 100 acres

- A. June 12 to July 28, 1986 Ripping operations conducted
- B. June 11, 1987. Areas re-ripped Vegetation had failed Sorghum was replanted and came up well

- C Week of October 19, 1987 Cheat grass will be controlled with Roundup application
- D. Week of October 26, 1987. Native grasses will be seeded through the sorghum cover. Alternative seeding practices will be investigated such as broadcast seeding, hydroseeding and alternatives such as borrowing a suitable 6 inch cover soil to place on the rocks will be evaluated These alternatives will be investigated to determine the best way to reclaim the small areas of rocky, difficult lands and prevent erosion.
- E Spring 1988, early April An evaluation of probable seeding success will be made based on available moisture and indications of sprouting If necessary, a second spring seeding will be conducted
- F Mid-summer 1988 weed control may be necessary. Seeding success will be evaluated If revegetation is successful, the intervening strips will be plowed